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The ridges of cilia are represented by Professor Grant as extending the whole length of the animal from mouth to anus. This probably indicates a difference of species. The rows of cilia do not appear to me to be webbed, especially in the second species; and when in motion, it seemed as if the lateral cilia in each rows moved before the central, thus causing an undulating appearance and a play of colours. I could not observe the filaments branching out from the nervous circle as figured by Professor Grant.

The whole structure of the animal examined conveyed the idea of the bilateral rather than of the radiate type, and tended to confirm the opinions of M. Blainville on that subject.

M. Blainville's character of *Cydippe* might be amended thus:

Body regular, free, gelatinous, oval, divided into eight lobes, each crowned by a ridge furnished with transverse rows of vibratile cilia.

Mouth opening into a compressed and 4-lobed stomach, from which a canal proceeds to the anus. A cavity on each side of the centre opening towards the anal extremity and containing a long semipinnated retractile filament.

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3. Diagram of stomach and filamentary cavities.
4. Section showing vessels.

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[Continued from p. 92.]

LOPHOPETALUM, Wight, MSS. (*Celastrineæ*).

Calyx scutelliformis 4—5-lobus, lobis rotundatis brevibus. *Petala* 4—5 sessilia orbiculata patentia, supra circa basin cristis lobulisque carnosis instructa versus marginem nuda lævia. *Torus* discoideus, 4—5-gonus crassus carnosus calycis cavitatem omnino implens.

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Fructices *glabri*. Folia *opposita, petiolata*. Flores *magni, corymbosi*.

1. *L. Wightianum* (Arn.); foliis elliptico-oblongis paullo acuminatis basi obtusis integerrimis, corymbis terminalibus paniculatis, floribus pentameris, ovario 3-loculari. *Wight. Cat. n. 2440*.

Hab. in Malabaria, *Wight*.

Flores 6-8 lineas lati. Petala pallide sulphurea. Discus sanguineus, angulis protuberantibus rotundatis, petalorum bases incumbentibus.

2. *L. grandiflorum* (Arn.); foliis subovalibus obtusis basi acutis serratis, corymbis axillaribus folio brevioribus, floribus tetrameris, ovario 4-loculari.—*Evonymus grandiflorus*. *Wall. in Roxb. Fl. Ind.* (ed. Wall.) ii. p. 404; *Cat. n. 4282*.—*E. lucidus*. *Don, Prod. Fl. Nep.* p. 191. *DC. Prod.* ii. p. 4.

Hab. in Nepala, *Wallich*.

Flores 10 lin. lati. Petala (fide Wallich) alba. Discus atroviridis, quadratus.

I am unwilling to change the specific name of this species, as it has been already fully described under it by its distinguished discoverer, but the flowers are scarcely larger than those of the other species.

MICROTROPIS, Wall.

Sepala 5, orbiculata, 3 interiora, 2 exteriora, imbricata. *Corolla* hypogyna, gamopetala, carnosae, 5-partita, laciniis oblongis concavis erectis intus carina longitudinali instructis, deciduis tubum carnosum annuliformem circa ovarium relinquentibus: aestivatio imbricativa. *Stamina* 5, brevia, corollae tubo inserta, laciniis alternantia. *Filamenta* subulata glabra. *Antheræ* cordato-oblongae, dorso medio affixae, biloculares intus longitudinaliter dehiscentes. *Squamulae* 5, breves, epipetalae staminibus alternantes, paullo inferius insertae. *Discus* nullus (nisi tubo corollae arcte coalitus). *Ovarium* liberum, brevissimum, biloculare, loculis 2-ovulatis. *Ovula* collateralia, adscendentia. *Stylus* conicus, carnosus, ab ovario externe haud distin-

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Arbor elegans, glabra, habitu Carallia. *Folia opposita, ovata vel ovato-lanceolata, obtuse acuminata, coriacea, integerrima, subtus pallida, tenuiter penninervia, petiolata.* *Stipulae nullae.* *Pedunculi axillares, vel supra-axillares ac interpetiolares, perbreves, semel bisve dichotomi, pauciflori.* *Flores brevissime pedicellati, pedicellis basi bibracteolatis.*

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The above character is derived solely from *M. discolor*, but Dr. Wallich, in his list of East India plants, indicates with doubt some other species. One of these, however, is *Celastrus bivalvis* of Jack, which has no petals, and must be very different.

The genus is only pointed out by Dr. Wallich, and is adopted by Dr. Lindley, in his ‘Introduction to the Natural System’, without a definition. Dr. Wallich, influenced probably by the gamopetalous corolla, originally united it with *Cassine*, which is now generally referred to *Ilicineae*: Roxburgh inserted it in *Evonymus*, and described the petals as distinct: DeCandolle seems not to have been acquainted with it: Lindley places it without doubt in *Celastrineae*. To me its affinities are not at first sight very clear. In the true *Celastrineae* there is usually a large flat disk, covering the shallow bottom of the calyx and cohering with it; the petals are distinct, and the stamens, so far from being inserted on the petals, often arise from the middle of the upper surface of the torus or disk. In *Ilicineae*, on the contrary, the petals are more or less united at the base, the stamens inserted on the tube, and there is no disk; from which considerations only one would have little hesitation in referring *Microtropis* to the latter family. But in *Ilicineae* the ovules are solitary, the seeds exarillate, and the fruit indehiscent; so that in as far as relates to these organs this genus is more related to *Celastrineae*.

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The genus is only pointed out by Dr. Wallich, and is adopted by Dr. Lindley, in his ‘Introduction to the Natural System’, without a definition. Dr. Wallich, influenced probably by the gamopetalous corolla, originally united it with *Cassine*, which is now generally referred to *Ilicineae*: Roxburgh inserted it in *Evonymus*, and described the petals as distinct: DeCandolle seems not to have been acquainted with it: Lindley places it without doubt in *Celastrineae*. To me its affinities are not at first sight very clear. In the true *Celastrineae* there is usually a large flat disk, covering the shallow bottom of the calyx and cohering with it; the petals are distinct, and the stamens, so far from being inserted on the petals, often arise from the middle of the upper surface of the torus or disk. In *Ilicineae*, on the contrary, the petals are more or less united at the base, the stamens inserted on the tube, and there is no disk; from which considerations only one would have little hesitation in referring *Microtropis* to the latter family. But in *Ilicineae* the ovules are solitary, the seeds exarillate, and the fruit indehiscent; so that in as far as relates to these organs this genus is more related to *Celastrineae*.

After the fall of the segments of the corolla, its annular base around the ovarium, bearing on its inside the persistent filaments and scales, presents so much the appearance of a cup-shaped fleshy torus or disk (such as is to be seen in some species of *Celastrus*), that for some time I felt disposed to view it as such, and that the petals might be distinct and attached to the back or edge of this ring; but on examining several flowers in various stages I can perceive no trace whatever of an annulus, so long as the segments of the corolla were not broken off. There is therefore no distinct disk; but I am far from denying it a torus, and in a sense somewhat different from what usually exists in the Corollifloræ. In most of that group of orders the petals are soldered together by their margins, and the filaments of the stamens, although apparently epipetalous, are decurrent, and may have their insertion traced to the same point as that of the corolla; there is besides sometimes a hypogynous disk, or glands. In *Microtropis*, however, the stamens are not at all decurrent, and therefore it is not improbable that there is a disk or torus, with which the lower part of the petals is completely incorporated, and that the stamens and scales are inserted on the upper or inner surface of the disk. Under this point of view *Microtropis* might be left in *Celastrineæ*, and the principal objection to such would arise from the supposed torus being hypogynous, while in those species of *Celastrus* in which a cup-shaped torus is to be seen the torus is adnate to the bottom of the calyx, the margin only being free. In *Celastrineæ*, moreover, the tube of the calyx is shallow and broad, in *Microtropis* it is small, if indeed any can be said to exist, for the sepals appear almost quite distinct.

Nearly all the genera referred to *Celastrineæ* and *Ilicineæ* require careful revision, several of them being much at variance with the characters of the orders in which they are placed. Professor Lindley inserts all the section *Aquifoliaceæ* of De Candolle in one order, reserving *Celastrineæ* for the others. Mr. G. Don, in his edition of 'Miller's Dictionary, or General System of Gardening,' refers *Cassine*, *Nemopantes*, and a few others of DeCandolle's *Aquifoliaceæ* to *Celastrineæ*, and *Myginda*, *Ilex*, *Prinos*, and some new genera of Blume's to *Ili-*

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I. EUVATERIA.

Calycis lacinia obtusæ, fructiferi immutatae. Petala ovalia calycem vix superantia. Stamina 40—50: antherarum loculi lineares. Stylus elongatus, stigma acutum.—Panicula magna, terminalis.

1. *V. Indica*, Linn. Wight et Arn., l. c.

II. ISAUXIS.

Calycis lacinia ovatae acutae, fructiferi grandefactae. Petala falcata, calyce triplo longiora. Stamina 15: antherarum loculi oblongi. Stylus brevis, stigma clavatum, 3—6-dentatum.—Paniculae axillares, folio breviores.

2. *V. lanceolata* (Roxb.); foliis lanceolatis basi acutis. *Roxb. Fl. Ind.* ii. p. 601.

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XVII.—*On the Goniatites found in the Transition Formations of the Rhine.* By M. ERNEST BEYRICH.

[With Plates.]

[Continued from p. 20.]

Section IV. IRREGULARES.

THE dorsal lobe simple, infundibuliform. Two or more pointed lateral lobes, generally infundibuliform, increasing irregularly.

7. *Ammonites Hæninghausi*, Von Buch.

L. Von Buch Goniat. p. 40. Pl. II. fig. 2.

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